



Cooperative Transportation Systems Pooled Fund Study MOU with USDOT Overview

Jose Gomez

May 18, 2011

Virginia Center for Transportation Innovation and
Research

Connected Transportation Systems Pooled Fund Study

Overview

- CTB action is needed to approve VDOT entering into an agreement with US DOT for research related to new technologies that provide for communications between vehicles and the road infrastructure
- What are connected transportation systems
- What is the research being undertaken by the Pooled Fund Team
- What are the terms of the agreement

Connected Vehicle Technology

“Connected Vehicle” is a national initiative to improve safety and mobility by enabling communications between vehicles, infrastructure and devices

Vehicle connectivity provides a bi-directional ability to share information

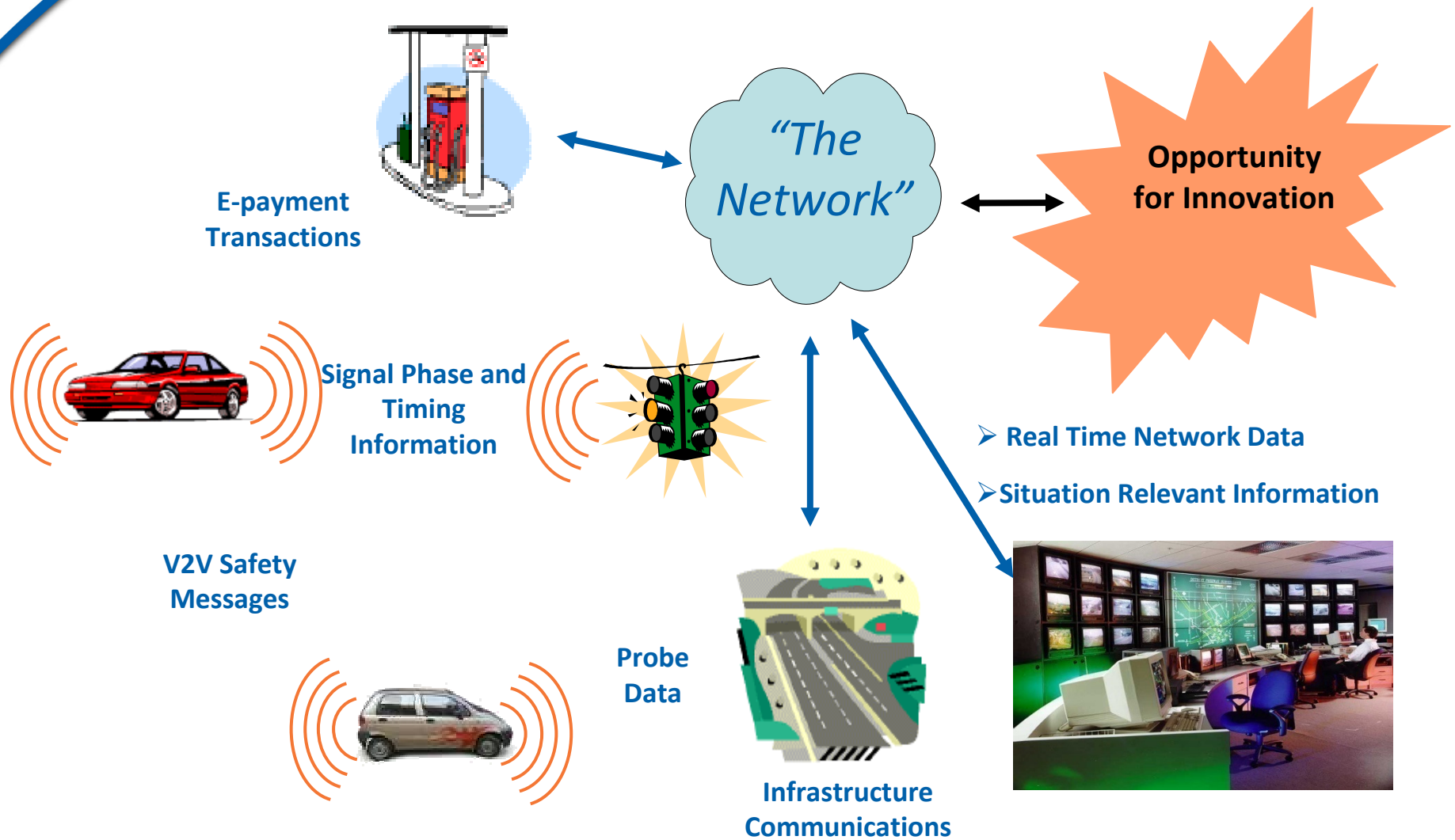
- **Vehicle to Vehicle (V2V)**
- **Vehicle to Infrastructure (V2I)**
- **Vehicle to Device (V2D)**

Wireless communication channels are used

- **Cellular for general information**
- **Dedicated Short Range Communications (DSRC) for low-latency, robust, secure information**

Various in-vehicle and roadside applications are enabled with the communicated information

Connected Vehicle Technology



**Slide adapted from USDOT*

Cooperative Transportation Systems Pooled Fund Study

- The Pooled Fund Study (PFS) is a partnership of transportation agencies who have established a program to facilitate the development and evaluation of Connected Vehicle applications
- The program will prepare state and local transportation agencies for the deployment of Connected Vehicle technologies
- The program will result in the following outcomes:
 - Development and demonstration of Connected Vehicle-enabled system operations algorithms, tools and applications
 - Preparation for field demonstration tests

Cooperative Transportation Systems Pooled Fund Study Membership

Paying/Voting Members

- VDOT is lead agency with administrative and technical support from UVA
- Ten Members:
Virginia, California, Florida, Michigan, Minnesota, New York, Texas, Washington, and Maricopa County DOT, and FHWA

Non-paying/Non-voting Members

- Associate Members:
Palm Beach Co, FL; Oakland Co, MI; MTC (Bay Area); Transport Canada
- Liaisons:
NCHRP/SHRP 2; AASHTO (strategic and deployment plans)

PFS members continue to encourage other agencies to join

- Idaho DOT, Utah DOT and Transport Canada have expressed interest in joining

Current Pooled Fund Study Initiatives

Three projects were recently completed under the first year of the Cooperative Transportation Systems PFS:

- **Investigation of the Potential Benefits of Signal Phase and Timing (SPAT)**
- **Investigation of Pavement Maintenance Support Applications**
- **Development and Evaluation of Traffic Signal Control Algorithms**

The following projects will be completed in the next twelve months:

- **Certification Program for Connected Vehicle Technologies**
 - Develop the foundational knowledge necessary to guide PFS members through certification issues related to Connected Vehicle hardware and software
 - Period: April 2011 – June 2011
- **Aftermarket Connected Vehicle On-Board Equipment (OBE)**
 - Investigate methods to accelerate the introduction of aftermarket OBE units to vehicle fleets
 - Period: April 2011 – February 2012

US DOT and VDOT MOU

- VDOT (as lead state) and USDOT have negotiated an MOU to allow USDOT to contribute additional funding for the development of applications that advance USDOT programs
- The agreement allows for up to \$2 million in US DOT research funds to be directed to the Pooled Fund. VDOT would administer the funds on behalf of the Pooled Fund members
- MOU is finalized and requires Commonwealth Transportation Board approval and signature by Commissioner
- An initial project, “Multi-Modal Intelligent Traffic Signal System”, will conduct the foundational analysis and design necessary to prepare for a field test/demonstration of a signal system fully equipped with connected vehicle technology applications
 - Funding: USDOT will provide \$500k this fiscal year ; PFS will match \$125k
 - Period of Study: 12 months



Cooperative Transportation Systems Pooled Fund Study

QUESTIONS